

(21) Application No 9010725.1

(22) Date of filing 12.05.1990

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(51) INT CL<sup>5</sup>  
H01B 7/08

(52) UK CL (Edition K)  
H1A A6H A8

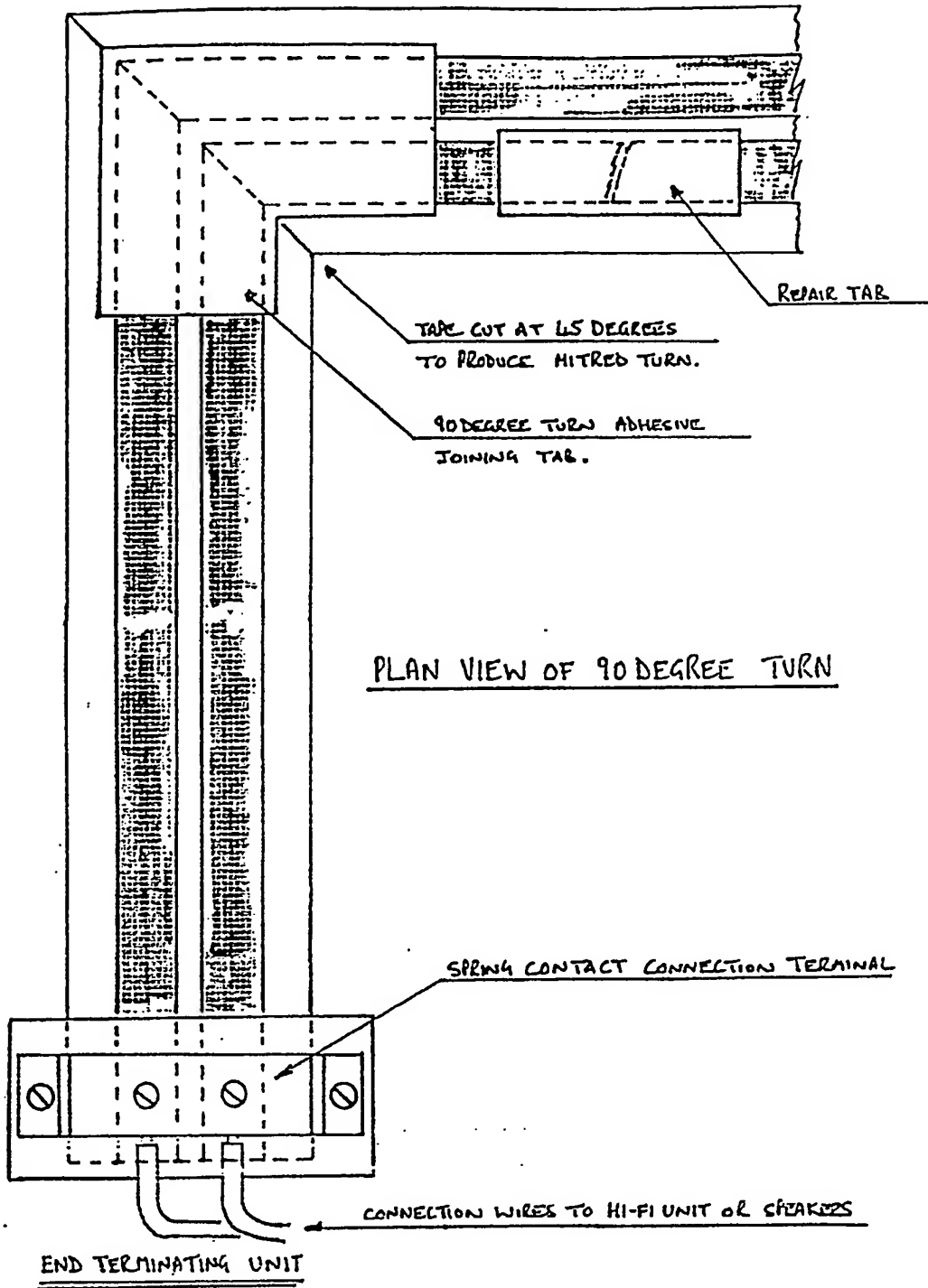
(56) Documents cited  
GB 2052134 A GB 1604676 A GB 1601000 A  
GB 0963629 A US 4460804 A US 3524921 A  
System PDC, Harvey Hubbell, Bedford, MK42 7SH,  
pages 1 to 9.

(58) Field of search  
UK CL (Edition K) H1A A6H A8  
INT CL<sup>5</sup> H01B 7/08  
Online databases :WPI

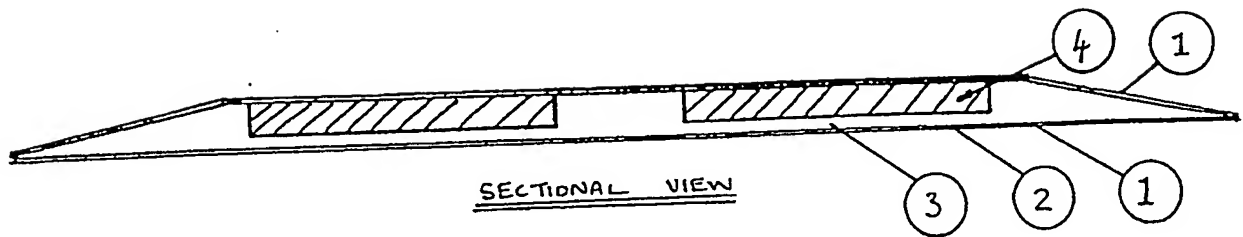
(54) Flat cable for speaker system

(57) A flat cable comprising twin conductive strips e.g. Cu or Al, combined with a flat flexible plastics backing strip, is used to connect components e.g. speakers, in an audio system. Since the cable is thin it may be installed unobtrusively under carpets or wallpaper, or over wallpaper disguised as a border. The upper surface of the cable may be decorative or coloured to blend in with its surroundings. Connection boxes are provided at the ends of the cable. An adhesive e.g. epoxy resin, is used to secure the cable in place, or the cable may be self-adhesive with a release layer. The cable has bevelled edges. The drawing shows the cable installed as a right-angle bend with a joining tab and a repair tab, and the cross-section of the cable.

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DESCRIPTION OF FLAT STRIP AUDIO CONNECTION SYSTEM

(AS PER ATTACHED DIAGRAM)

The intent of this system is to provide a system that can replace the electrical cables that connect separate audio (Hi/Fi) speakers to their parent amplification/control system.

The envisaged use of this system is to provide a safe, easy and flexible connection system that can be made non-intrusive or hidden.

This is achieved by twin conductive tapes combined with a flat, flexible backing strip on some suitable non-conductive material eg vinyl.

The installation of the system can be achieved by installing in a room, either under the wallpaper, or on top of the wallpaper disguised as a wallpaper border. The system can also be installed under a carpet or floor covering.

When the system is installed, small connection boxes are attached at each end of the flatstrip, to enable flexible connection leads to be connected to them from the audio system equipment.

Application for a patent.      Reference number 9010725.1

Audio Speakers Flat Strip Connection System

Statement of Claims.

1. The essence of the system is to produce a visually non-intrusive connection system for audio frequency Hi-Fi equipment, where the speakers are located separately from the main power amplifier output unit. This is to be achieved by using a thin flat strip or ribbon in which two electrically conductive strips are embedded, thus replacing the visually intrusive circular electric cable that is normally employed.

The connection system is designed to provide a range of differing but similar products to cover a range of installation applications. The flat strip connection system does not claim to offer enhanced performance, although tests have shown that comparable performance is easily achievable.

2. The basis of the system is a thin flat strip or ribbon, containing two embedded electrically conductive strips, generally of copper or aluminium bases.

The system is designed to be installed:-

- a) Under a wall covering or paper,
- b) Over a wall covering or paper, suitable finished so as to be mistaken for a decorative boarder or similar.
- c) Under a floor covering or carpet,
- d) behind skirting boards or architrave.

The cross-sectional dimension of the flat strip connection system will vary from the very thin (as envisaged for application a) above, to a more robust dimension for example application c). In any cross-dimension, the cross-sectional area of the conductive strips is sized to provide the required power handling rating. The flat strip system is further designed to allow for a range of attachment to various surfaces, eg self-adhesive backing, paste or bonding systems.

3. The system is completed with a range of accessories

These are :-

- a) Shaped sections of flat strip to enable installation of the connection system through various planes and angles.
- b) A range of connection boxes that provide the interface between the flat strip and the audio equipment connected at either end. The connection boxes make an electrical contact with the flat strip, and provide two terminals to allow the connection of electrical jumper leads to the end equipment.

LEGEND TO DRAWINGS

- 1/ REMOVABLE BACKING TAPE
- 2/ ADHESIVE (SUITABLE FOR BACKING PAPER, WALL PAPER AND VINYL, PLASTER TREATED WITH EMULSION PAINTS, WOOD & PLASTICS.
- 3/ CARRIER OR BACKING TAPE.
- 4/ CONDUCTIVE STRIP - COPPER OR ALUMINIUM (WIDTH - 5mm) (THICKNESS - 0.5mm) (X-SECTIONAL AREA 2.5mm)

NOTES

- 1/ PRODUCT WIDTH TO CONFORM TO WIDTHS USE BY 'WALLPAPER BORDER PRODUCTS'
- 2/ UPPER FACE BACKING TAPE TO BE AVAILABLE IN PATTERN PRINTS
- 3/ CORNER TURNING TAB IS AFIXED BY SCRAPING AWAY CONDUCTIVE STRIP COVERING AND TAB IS GLUED TO NONE CONDUCTING SURFACES
- 4/ END TERMINATION UNIT IS MOULDED PLASTIC UNIT (IN RANGE OF COLOURS)  
C/W SPRING CONTACT/ WIRE TERMINAL SCREWS
- 5/ TAPE TO BE ABLE TO BE FIXED AROUND WALL CORNERS
- 6/ PRODUCT TO BE DESIGN FOR USE EITHER UNDER OR OVER WALLPAPER PRODUCTS.

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**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number 9010725.1

**Relevant Technical fields**

(i) UK Cl (Edition K ) H1A (A6H, A8)

(ii) Int Cl (Edition 5 ) H01B (7/08)

**Databases (see over)**

(i) UK Patent Office

(ii)  
 ONLINE DATA-BASES WPI

**Search Examiner**

J L FREEMAN

**Date of Search**

18 JULY 1991

Documents considered relevant following a search in respect of claims

1 TO 3

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2052134 A (THOMAS & BETTS) page 1 line 6 & figure 1	All Claims
X	GB 1604676 A (K.G. BARLOW) whole document	"
X	GB 1601000 A (D.G. THOMAS) whole document	"
X	GB 963629 A (WHITNEY BLAKE & CO) figures 1 and 2	"
X	US 4460804 A (R.L. SVEJK SKY) whole document	"
X	System PDC, Harvey Hubbell, Bedford, MK42.7SH, pages 1 to 9	"
X	US 3524921 A (L.WOLF) whole document	"

SF2(p)

Category	Identity of document and relevant passages	Relevant to claim(s)

#### Categories of documents

**X:** Document indicating lack of novelty or of inventive step.

**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.

**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

**&:** Member of the same patent family, corresponding document.

**Databases:** The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).